

A first nest record and notes on the breeding behaviour and season of the East Coast Akalat *Sheppardia gunningi* from Arabuko-Sokoke Forest in Kenya

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The East Coast Akalat *Sheppardia gunningi* is a shy and little known forest species that occurs along the eastern African coast and in Malawi (Dowsett-Lemaire 1989, Archer *et al.* 1991, Keith *et al.* 1992, Evans *et al.* 1994, Oatley & Arnott 1998, Seddon *et al.* 1999, Nemeth & Bennun 2000, Matiku *et al.* 1999). With its scattered and patchy distribution it has been classed as globally Vulnerable (Collar *et al.* 1994, BirdLife International 2000). Our observations come from Arabuko-Sokoke Forest in Kenya (3°18' S and 39°70'), known to be a stronghold for the species (Oatley & Arnott 1998). Although the forest is one continuous block, it contains three distinctive vegetation types (mixed forest, *Brachystegia* forest and *Cynometra* forest) determined by soil type and rainfall patterns (Kelsey & Langton 1984).

The first nest of the species was found in Arabuko-Sokoke Forest by David Ngala on 15 January 1992. Because of concern over disturbing the nestlings, which appeared close to fledging, it was examined on the same day and only watched briefly on the following day. It was situated in a rather degraded part of the mixed forest (Kelsey & Langton 1984, Blackett 1994), not far from the so-called Nature Reserve track (less than 25 m), and in an area that is popular with birders. The nest (described below) was well hidden on the forest floor under a pile of leaves and fallen sticks that had an entrance on one side. It contained three young. When the nest was observed on the following day an adult bird visited and fed the young. It saw the observer and called several times with a very low burring churr (similar to the rattle call described by Oatley & Arnott 1998), then started to sing softly. It also cocked the tail repeatedly and dropped and spread one wing towards the observer, covering its legs and flanks. One week later the nest was empty. Probably the young had fledged, although predation cannot be excluded.

In December 1995 three occupied nests were found by David Ngala (2) and Erwin Nemeth (1) in the *Cynometra* forest area of Arabuko-Sokoke (Kelsey & Langton 1984, Blackett 1994). On 5 December a nest with three eggs, on 27 December one with two fledging young, and on 30 December a

third nest with two 2–3 day-old nestlings were found. An additional empty nest, very similar to the others, was found on 6 December and assumed to be an akalat nest.

All four nests were built on the ground. They were bulky and built out of fine grasses and moss. One measured nest had an interior diameter of 5.5 cm, an overall diameter of 11 cm and a depth of about 5 cm. In two cases the nests were built into leaf litter with leaves covering more than half of the opening. The other nests were hidden behind or below dead stems. In structure, all were open cups, as is usual for robins (Oatley & Arnott 1998), though covering of the opening by leaves or the location just below a dead stem gave them a cave-like or semi-domed appearance.

The three eggs found in one nest were speckled creamy-brown on a pale whitish background, with sizes of 18.7 × 15.3 mm, 19.5 × 15.2 mm and 20.4 × 15.4 mm. Only one egg from this clutch hatched, but three birds were observed tending the hatchling. All were seen simultaneously; from their appearance they were probably two males and one female (males are thought to be larger and more brightly coloured than females, see Britton & Zimmerman 1989, and Evans *et al.* 1994).

In the second nest found in 1995, the young had fledged and were able to fly. At this nest two birds were providing care. The third nest, with two chicks about 2–3 days old was observed during one morning, but was then depredated. At this nest a female and male were feeding the young and working closely together. One bird regularly stayed near and above the nest after feeding and waited until its partner arrived, whereupon the birds called to each other and the first parent left. After one rainy night the female brooded the young during the morning for more than two hours. During this time, the male visited at least three times and handed over food to the sitting female, which she fed to the young. The male also devoted some time to singing about 30 m away from the nest.

Only a few food items could be identified at the nests we observed. There were eight caterpillars, seven locusts, two spiders, two lepidopterans, three mantises, one millipede and one insect egg. There were also 20 cases where the prey was not identified (for discussion of food and habitat selection see also Nemeth & Bennun 2000 and Matiku *et al.* 1999). At the two empty nests we found no sign of predators. One nest and one deserted egg were collected for the National Museums of Kenya, Nairobi.

There are unpublished observations of nests from Tanzania (Baker in Oatley & Arnott, 1998), and a further nest was found in 1998 in the Chinizuia Forest of Mozambique (Jones 1999).

Seasonality in this species is poorly known. Brown & Britton (1980) assumed dry season breeding because of a juvenile recorded on 1 April. Juvenile akalats with spotted plumage were caught on 3 April and 18 May 1991 (by John Fanshawe). Since the spotted juvenile plumage of Robins is

retained for 3–4 months (Oatley and Arnott 1998), it supports the view that breeding may take place in the dry season or early in the long rains. In Arabuko-Sokoke, very little rain falls in January and February, a little more in March, and then the 'long' rains set in from April to June or July (Fanshawe 1995). The 'short' rains fall in November and December. Keith *et al.* (1992) supposed that laying-dates in coastal Kenya and other areas would occur in November and December. On the Rondo Forest Plateau in SE Tanzania, birds showed progressively developing brood patches and therefore probable breeding from November to January (Holsten *et al.* 1991).

The 1995 nest data suggest that eggs may be laid at the end of the short rains in December, but probably also in January at the beginning of the dry season. In January 1992, two juveniles were netted in the *Afzelia* forest close to the original nest site. In 1995 singing activity was very high in the end of November and December and ceased in January. Two of 39 birds mist-netted in November and December that year were juveniles and five were immatures of uncertain age. Of the 32 adults, five had brood patches. One family party with two young was seen at the *Afzelia* Forest on 5 February 1995. It appears that the breeding season may be extended, covering the entire period from November into the long rains in May, including the dry months, and that in any year activity is strongly influenced by specific rainfall patterns.

All birds captured with brood patches were at the lower end of the wing and tarsus sizes of the sample (Nemeth, unpublished data) and were probably females. In the Usambara Mountains Evans *et al.* (1994) also only found brood patches in two smaller individuals and it seems likely that only females incubate.

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